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Archimedes Catapult

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Belly-Bow

The earliest Greek catapult was the "belly-bow." a large bow mounted on a case, one end of which rested on the belly of the person using it. Early catapults probably fired arrows from a bow not much stronger than one a man could draw even by mechanizing the drawing and releasing of the arrow,

Belly-Bow Video

https://www.youtube.com/watch?v=k_P8bqlgd5ro

This is a link to a video of someone using a belly bow and explains the different parts to it.

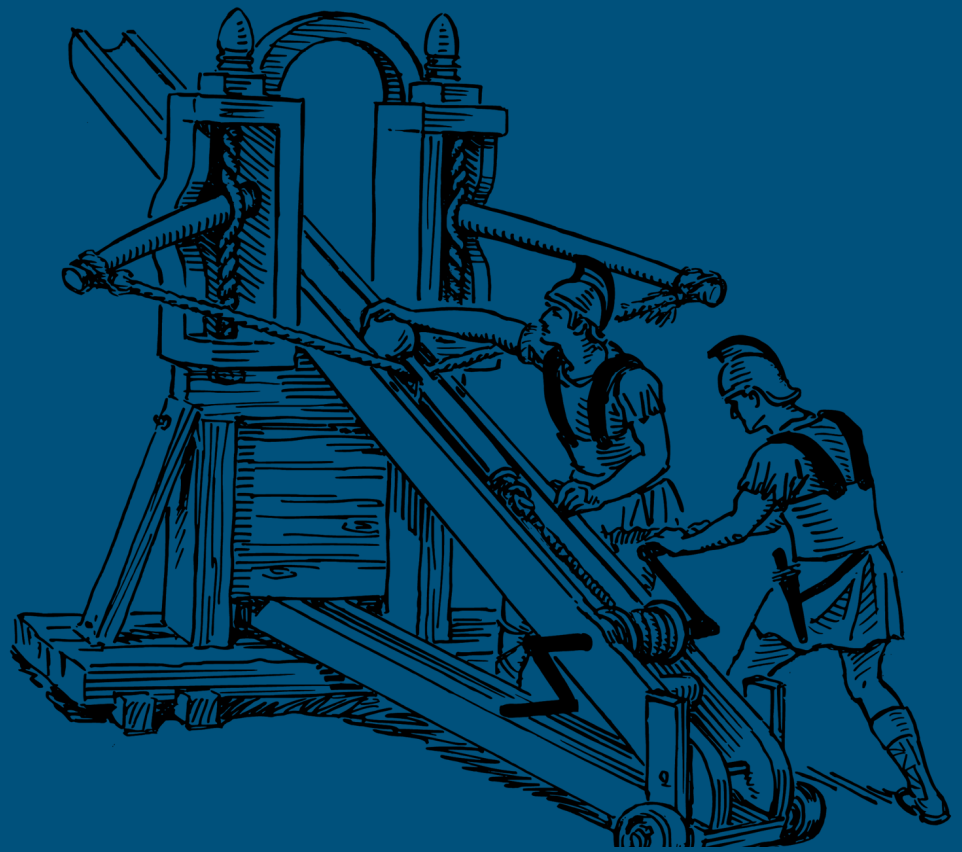
TORSION SPRINGS

The next step was perhaps achieved by engineers working for Philipil of Macedonia. Instead of arms, the bow structure now had "springs." that is, tight bundles of sinews or ropes wrapped around two frames, which in turn were fixed on the case and connected with the release mechanism.

One of the crucial steps in designing the torsion springs was establishing a ratio between the diameter and the length of the cylindrical bundle of elastic cords.

TORSION SPRINGS enabled the ancient catapult engineers to design much larger weapons, such as this Roman stone-throwing version, which launched a stone weighing one talent, or 26 kilograms. A pouch woven into the center of the bowstring holds the stone, and a ring attached behind the pouch is grasped by the trigger claw.

Two Different Types of Catapults Used with Torsion Springs

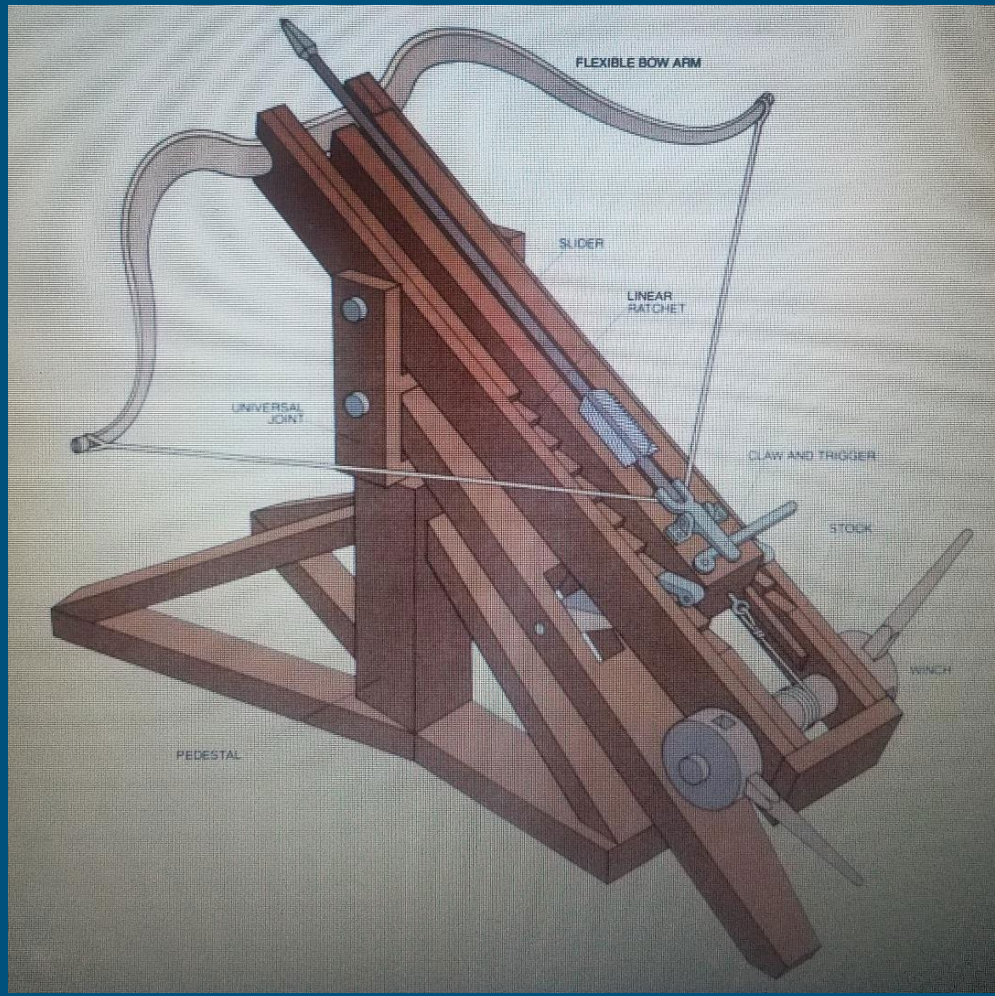


The basic piece in the catapult was the stock. a compound beam that formed the main axis of the weapon. Along the top of the stock was a dovetail groove. in which another beam. the slider, could move back and forth.

The slider carried on its top rear surface a claw and trigger arrangement for grasping and releasing the bowstring.

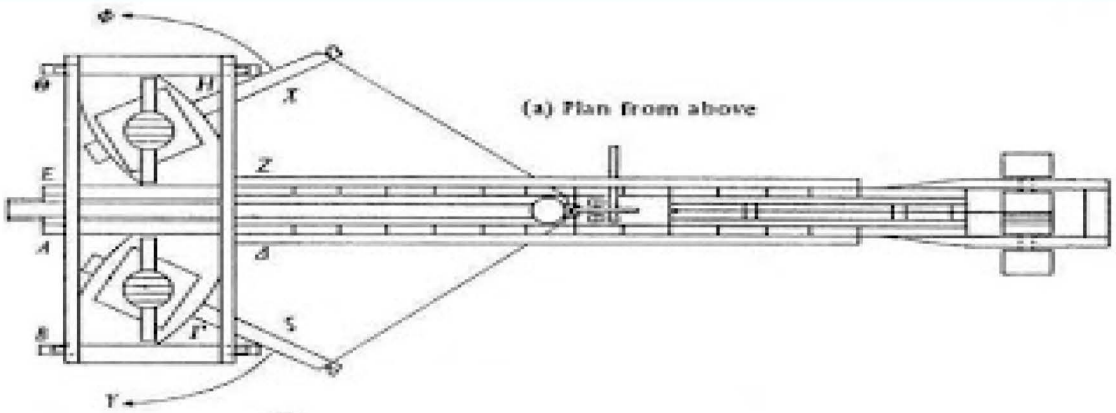
In front of the claw on top of the slider was a trough in which the arrow lay and from which it was launched.

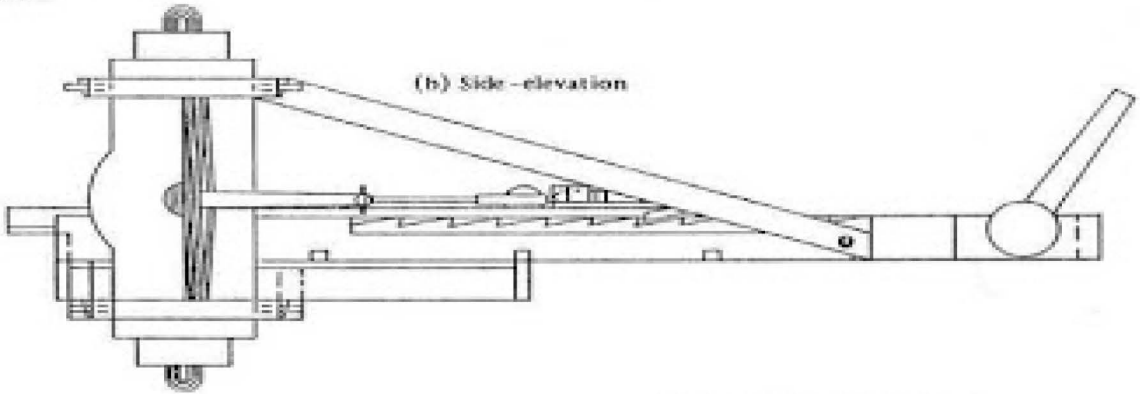
In operation the slider was run forward until the claw could seize the bowstring. Then the slider was forced to the rear, taking the string with it until the bow was fully drawn.

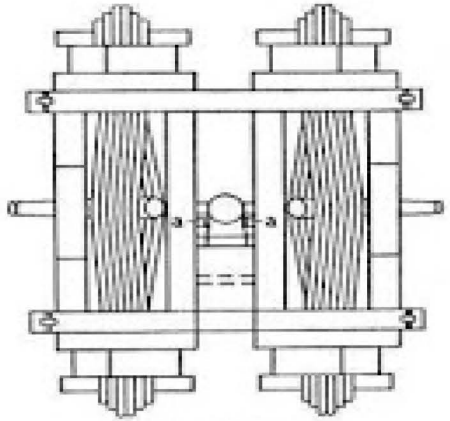


Special mathematical and technical skills were necessary to build and keep the catapult functioning and the risks involved in operating it were less than those of the army soldiers.

In all, catapults significantly affected the direction of warfare and with it the equilibrium of politics and society. Broadly speaking, they shifted the advantage in favor of the offense. Until the time of the catapult besiegers were almost always at a great disadvantage.







Mark IVs stone-thrower